

# JOINT OIL ANALYSIS PROGRAM

**GYSGT AVERY**

# LEARNING OBJECTIVES

- **TERMINAL LEARNING  
OBJECTIVE**
- **ENABLING LEARNING  
OBJECTIVE**

# **BACKGROUND**

- **It's a scientific test and evaluations performed on used oil.**
- **Provides information on:**
  - ✓ **Internal condition of engines.**
  - ✓ **Transmissions.**
  - ✓ **Other oiled components.**

# TESTING



- **SPECTROMETRIC ANALYSIS:**
- **PHYSICAL PROPERTY ANALYSIS:**

# TESTING

## ➤ SPECTROMETRIC ANALYSIS:

- ✓ **Determines presence of various wear metals in oil.**
- ✓ **Determines which component parts may have caused it.**
- ✓ **Periodic sampling helps detect abnormal wear.**
- ✓ **Used as a management/analysis tool.**
- ✓ **Final determination for component and /or parts replacement is the responsibilities of the unit CO or representative.**

# TESTING

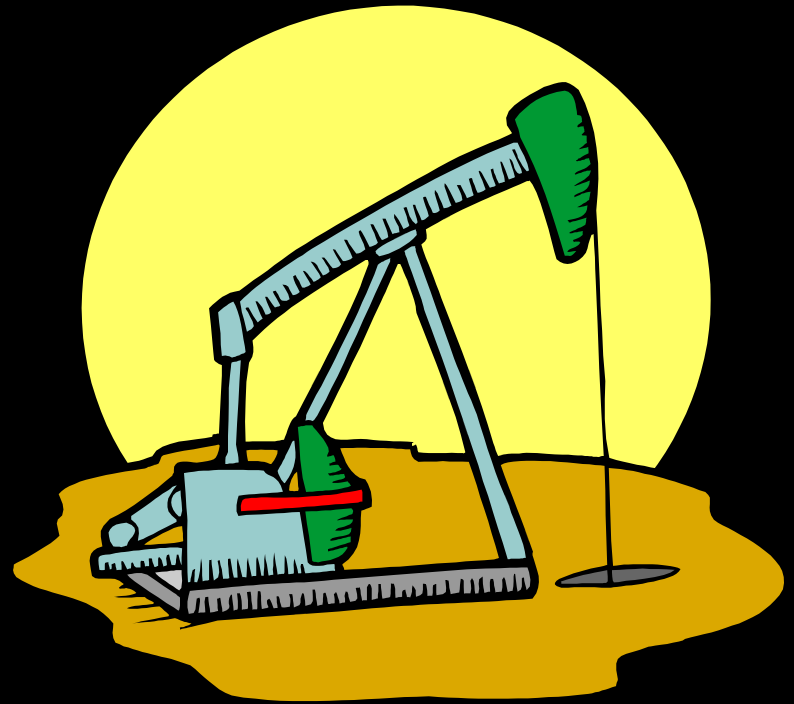
## ➤ PHYSICAL PROPERTY ANALYSIS:

- ✓ Detects property changes.
- ✓ Viscosity, Fuel dilution, or water content.
- ✓ Prevents too frequent oil changes.
- ✓ It's the preferred method which determines component or part replacement.



# **OIL AND FILTERS**

- **Changed when recommended by the lab on items not under warranty.**
- **CO or designated representative will make final determination.**



# **WHEN TO SAMPLE**

- **SCHEDULE**. In conjunction with PMCS.
- Equipment with a warranty will be sampled in conjunction of PMCS, per TM, until expired.



# WHEN TO SAMPLE

- **SPECIAL.** Submit to JOAP Lab.
  - ✓ Request of Lab.
  - ✓ Eng. Or Trans. has been replaced.
  - ✓ Indication of problem, (overheating, excessive loss of oil, contamination, visible metal particles.
  - ✓ CO's discretion.
- Special samples will be banded w/red tape. DD Form 2026, marked **SPECIAL** in remarks, and border will be outlined in red.

# **WHEN TO SAMPLE**

- **EXEMPTIONS**. Deployed or stored for more than 90 days, developmental purposes, static displays or training aids.
- **WARRANTY ITEMS**. Oil/filters changed per interval until expiration.
  - ✓ If a problem is identified monitor will notify warranty coordinator.

# **HOW TO SAMPLE**

- **If equipment has been operated in the last 30 days or ambient temperature allows, oil need not be warmed up.**
- **Oil needs to be brought to operating temperature if coming from storage, ambient temperature is to low or requested by the lab.**
- **Old and new oil must mix.**

# SAMPLING METHODS



- VALVE METHOD.
- PUMP METHOD.

# VALVE METHOD

## ➤ VALVE METHOD.

- ✓ Open valve.
- ✓ Flush small amount from the line.
- ✓ Place bottle under valve.
- ✓ Fill to 1/2" from top.
- ✓ Replace lid.
- ✓ Write equipment serial# on bottle.

# PUMP METHOD

- PUMP METHOD. Used to take samples from the filler neck or dipstick tube.
  - ✓ Determine how long tube needs to be, cut tube approx. 10" longer than dipstick. One end straight other end at an angle to prevent contamination.
  - ✓ Attach to pump using the straight cut end through the handle opening, extend  $\frac{1}{4}$ " below pump head threads, tighten.

# **PUMP METHOD CONT.**

- ✓ **Attach bottle to pump.**
- ✓ **Insert angle end into reservoir, Avoid touching bottom or sides**
- ✓ **Hold pump horizontally and pump, fill bottle to 1/2" from top of bottle, depress relief valve on top of pump to stop the flow.**
- ✓ **Remove bottle.**
- ✓ **Remove tubing, Discard properly.**
- ✓ **Write equipment serial# on bottle.**

# **PREPARING THE SAMPLE**

- **Complete a DD Form 2026 (Oil Analysis Request) for each sample.**
- **When mailing four samples or less use the Shipping Sacks.**
- **Insert sample into plastic bags and seal.**
- **Place sample and DD Form 2026 into sack.**
- **Send by 1<sup>st</sup> Class mail.**



# **PREPARING THE** **SAMPLE CONT.**

- **When more than four samples, use the box the bottles came in, place DD Form 2026 in plastic bag and lay on top of bottles.**
- **When using a courier secure each DD 2026 to its sample.**

# FORMS

## ➤ DD 2026 OIL ANALYSIS REQUEST:

- Standard tri-service form used for oil sample info.
- Must accompany all samples.
- Line by line instructions can be found in the TM-4700-15/1\_, pg. 2-10-1.

## ➤ DA 2408-20 OIL ANALYSIS LOG:

- Used to record results.
- Line by line instructions can be found in the TM-4700-15/1\_, pg. 2-11-1.

# FORMS CONT.

## ➤ DA 3254-R OIL ANALYSIS RECOMMENDATION AND FEEDBACK:

- ✓ Is used by the Army to recommend maintenance when an oil sample indicates a problem.
- ✓ Not used to request re-samples or recommend oil changes.

# **SUPPORT**

- **Army Labs. are the preferred over other Labs because:**
  - ✓ **Offer both Spectrometric and Physical.**
  - ✓ **Provides a single database to maintain historical data.**
  - ✓ **No Army Lab. use nearest JOAP Lab. or authorized commercial Lab. that offer both methods of testing.**
  - ✓ **Marine Corps is strongly encouraged to use certified Labs. Managed or contracted by the Army.**
    - **Encl. 1 contains partial list per (TI-4731-14/1C)**

# **SAMPLING MATERIAL**

- **Owning units must budget for sampling material. The following is what is required:**
  - ✓ **Oil Sampling bottles.**
  - ✓ **Tubing, Nonmetallic 1/4" outside diameter.**
- ✓ **Pump. Oil Sampling**
- ✓ **Sack, Shipping**
- ✓ **Bag, Plastic DD Form 2026**
- ✓ **DA Form 2408-20**
- ✓ **Labels**

# EQUIPMENT ENROLLED IN PROGRAM



**ENGINEER EQUIPMENT  
ENROLLED IN JOAP CAN  
BE FOUND IN  
ENCLOSURE 2 OF YOUR  
STUDENT OUTLINE AND  
IN THE TI-4731-14/1C.**

**QUESTIONS**

**?**

# QUESTIONS TO YOU!!!

Q. Name two types of oil analysis?

A. SPECTROMETRIC AND  
PHYSICAL PROPERTY

Q. What is the DD 2026 used for?

A. IT IS AN OIL ANALYSIS  
REQUEST



# BREAK!!!

